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ABSTRACT

The furniture and equipment inventory system of the Montgomery County Public Schools is examined in this report. Following a summary, comments provided by the Office of the Associate Superintendent for Supportive Services relating to recommendations made in the report are presented. The first chapter provides an introduction, background, program and inventory information, and objectives of review. Chapter 2 focuses on the capitalization policy and policy application. Chapter 3 examines records of new purchases and notes various accounts used. Chapter 4 looks at the physical inventories and verification of records and assets. Chapter 5 examines the management and control of the inventory system, stating the need for further improvements. Chapter 6 highlights efforts made to improve the inventory system, stressing the need for change in various areas. Five appendices include information on (1) scope and methodology of the report; (2) a list of schools included in the report; (3) comparisons of quantity and value of furniture and equipment; (4) selected items of furniture under $75; and (5) excerpts from the Maryland Financial Reporting Manual. Included in the report are 16 tables and 1 exhibit. (WTH)

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REPORT ON THE MANAGEMENT AND CONTROL OF THE FURNITURE AND EQUIPMENT INVENTORY SYSTEM

August 1985

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Superintendent of Schools

Prepared by the Department of Educational Accountability

EA 019 363

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MANAGEMENT AND CONTROL OF THE FURNITURE AND EQUIPMENT INVENTORY SYSTEM

by

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August 1985

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1985

DIGEST

MCPS has a significant investment in a large volume of furniture and equipment, and the inventory is increasing annually. At the end of Fiscal Year 1984, the MCPS reported a furniture and equipment inventory valued at over $59 million, representing almost one-half million items. During this year, the furniture and equipment inventory increased almost $5.7 million. (See p. 1-3.)

Accurate records of furniture and equipment are necessary so that management can exercise both financial and physical control over these costly and important resources. Such records evidence the financial control maintained by management over the expenditure of funds made available by county taxpayers for the acquisition of furniture and equipment, and they are the means by which managers can exercise effective control over the full use and proper disposition of furniture and equipment entrusted to them for educational purposes. (See p. 1-1.)

Information on furniture and equipment is also needed by the superintendent and the Board to help them satisfy their legal and political responsibilities for determining and demonstrating compliance with the various finance-related legal and contractual provisions and to assure acceptable organizational performance and effective management accountability. (See p. 1-1.)

Some years ago MCPS embarked on an effort to improve its furniture and equipment inventory system in line with these needs. Since that time, some progress has been made, but much more needs to be done. (See p. 1-1.)

As early as 1978, five problems were identified for solution so that the existing furniture and equipment inventory system could be a workable one. In spite of a new Property Management organization and other changes that were adopted in September, 1980, these five problems remain essentially unsolved, as follows:

-- The furniture and equipment inventory responsibility continues to be a low priority for school system administrators.

-- A capitalization policy (criteria for defining a fixed asset) has been established but is not working well.

-- The data base for the inventory is improved but is still not up to date.

-- Methods of enforcement and control are still lacking.

-- Resources for inventory verification have not been included in the budget. (See pp. 1-1 and 1-2.)

A recent internal audit of the MCPS furniture and equipment inventory system revealed:

1. MCPS capitalization policy is difficult to apply uniformily and has resulted in the capitalization of a large quantity of low dollar-value inventory of furniture and equipment. (See pp. 2-1 through 2-8.)

2. Accounting for the acquisition of new furniture and equipment is a confusing and imprecise process because of ambiguous budget guidelines and the accepted practice of charging many different accounts. (See pp. 3-1 through 3-4.)

3. Verifications of physical inventories disclosed that a large number of equipment items could not be located and that many of the inventory records need to be updated and improved. (See pp. 4-1 through 4-8.)

4. Special analysis of inventories disclosed inaccuracies and overstatements of about $500,000. (See pp. 4-8 and 4-9.)

5. Written criteria for inventory and management control are obsolete, inaccurate, and misleading; but the regulation is currently being revised. (See pp. 5-1 and 5-2.)

6. Significant numbers of physical inventories are not completed in a timely manner nor are the results updated on a reasonably current basis. (See pp. 5-3 through 5-6.)

7. Numerous changes resulting from physical inventories are being routinely made to furniture and equipment records without adequate management oversight or control. (See pp. 5-6 through 5-8.)

8. Some changes and improvements have been made to the furniture and equipment inventory system. However, new approaches and innovative techniques--such as

Bar Code labeling--that have the potential for providing substantial, cost-effective improvements have not been tried. (See pp. 6-1 through 6-8.)

To improve the system, the administration must see that the following comprehensive, interrelated actions are taken:

1. Revise the capitalization policy and develop a MCPS Catalog of Furniture and Equipment that can be used as a consistent and uniform basis for budgeting, accounting, purchasing, and capitalizing furniture and equipment. (See p. 2-7.)

2. Revise purchasing and accounting forms, practices, and procedures so that a complete and accurate record of all furniture and equipment purchases can be assured. (See p. 3-4.)

3. Revise budget guidance so that all furniture and equipment purchases are charged to expenditure object 05 and reconstruct the budget history of prior years' purchases for the fiscal year 1987 budget. (See p. 3-4.)

4. Discuss the revised approach to budgeting and accounting for furniture and equipment with the Board of Education, the County Council, and the County Executive. (See p. 3-4.)

5. Advise school and office officials that how well they control the assets entrusted to them will be taken into consideration in their performance evaluations. (See p. 4-9.)

6. Make independent verifications of selected school and office physical inventories by selecting random samples of equipment on the perpetual inventory records and physically inspecting them. (See p. 4-10.)

7. Correct serial number inaccuracies and eliminate overstated inventories. (See p. 4-10.)

8. Require supporting documentation for all significant changes resulting from school and office physical inventories. (See p. 5-9.)

9. Develop, revise, and update policies and procedures so that management can properly direct and control the inventory system. (See p. 5-9.)

10. Develop and implement a formal follow-up system and an internal monthly progress reporting system on the quality and timeliness of school and office inventories. An annual report on these matters

should also be made to the superintendent and the Board of Education. (See p. 5-9.)

11. Undertake new and cost-effective approaches for managing the furniture and equipment inventory system. (See p. 6-8.)

12. Use a Bar Code system to identify, record, and verify physical inventories. Bar Code labeling is economically feasible for MCPS and would aid in solving many of the problems discussed in this report. (See p. 6-8.)

13. Assure that the inventory control system receives adequate data processing support by pursuing legitimate needs through proper management channels. (See p. 6-8.)

There is little hope that material improvements of substantial proportions will take place or that the attitudes of the people involved will change unless the administration places greater emphasis on the management and control of the furniture and equipment inventory system and acts accordingly to improve it. Otherwise, the administration must remain content to live with the serious problems and deficiencies which currently exist.

COMMENTS PROVIDED BY THE

OFFICE OF THE ASSOCIATE SUPERINTENDENT FOR SUPPORTIVE SERVICES

The report "Management and Control of the Furniture and Equipment Inventory System" was begun over one year ago with five DEA authors. Although the report relies on DEA staff accumulated information equal to a full file drawer of documents, analyses, memorandums of interviews, and similar documentation, program managers were allowed only a few days to respond to this year long 72-page study without access to supporting files.

The furniture and equipment inventory system records 506,450 items with an acquisition cost of $64,000,000. These items are distributed over the 500 square miles of Montgomery County in approximately 200 MCPS buildings and facilities. The use and accountability for these items is in the hands of thousands of MCPS employees. There is no system of inventory accountability of this magnitude that will ever be without problems. However, the inventory problems are addressed and solved when they occur by responsible supportive services staff in cooperation with other staff and administrative personnel.

The MCPS furniture and equipment inventory system is in the best condition that it has ever been. Since 1981, there have been constant improvements that have resulted in no adverse comments by our external auditors and, in part because of these improvements, MCPS has been awarded the coveted ASBO Certificate of Excellence in Financial Reporting. Only 37 of 16,000 school districts in the United States have qualified for this award.

Maryland state audits of furniture and equipment in MCPS have revealed a physical inventory discrepancy rate of less than five percent for state funded items purchased over the past ten years. The state auditor indicated that the MCPS physical and record inventory keeping was as good as any in the state of Maryland.

In FY 1981, under the management of the Division of Supply and Property Management, the first ever countywide physical inventory of furniture and equipment was completed. The results of this inventory were accepted without supporting documentation for unlocatable items, and although the items deleted were so old that the acquisition date was not recorded on the inventory file, deleted items were transferred to the history file to provide an audit trail. Since the FY 1981 physical inventory, all significant changes to the furniture and equipment inventory have been accomplished with supporting documentation.

The furniture and equipment inventory responsibility is one of the many concerns of school system administrators, particularly those with instructional leadership responsibility. Still, system effectiveness is better now than it has ever been. School administrators participate in a cycle inventory process. In 1983, all serving principals, assistant principals, and business managers received special training in property control as well as other administrative tasks. Admittedly, some reinforcement of this responsibility may be necessary, however, the results indicate steady improvement.

The capitalization policy has been working well for there are over 1,200 different furniture and equipment items being inventoried. Periodic exceptions are identified and resolved. The policy is not difficult to apply.

The data base for furniture and equipment is current and further improvements occur regularly. It is not realistic or cost effective to expect that the data base would be constantly up-to-date. The current practice and frequency of adjustment to financial reports is realistic and accomplished in coordination with the director of accounting.

Chapter 2
2-9 Recommendation

DEA — The superintendent should request the Board to revise the capitalization policy to eliminate the $75 minimum guideline criteria and the manufacturer's serial number criteria.

Supportive Services: DO NOT CONCUR - The current capitalization policy is working well and provides a practical cost effective control. As indicated in the report, pages 2-5, "Most decisions are clear cut...." It is recognized that there will always be borderline cases for applying the capitalization policy. These items will continue to be subject to individual item review and subject to the criteria for equipment.

DEA — The superintendent should establish a select committee charged with developing and periodically updating a MCPS Catalog of Supplies, Furniture, and Equipment--a complete and comprehensive list of supplies, furniture, and equipment that is deemed appropriate for MCPS to capitalize as fixed assets and to control physically or to designate as supplies and not control physically.

Supportive Services — DO NOT CONCUR - A select committee is not needed to develop a catalog of supplies, furniture, and equipment. Table 36 is a listing of over 1,200 equipment items which is used by the accounting and supply and property management staff to guide them in applying the capitalization policy. The table of descriptions is expanded as different types of equipment items are purchased. A comprehensive list of supplies would require a Maryland telephone directory size catalog.

Chapter 3
3-6 Recommendation

DEA — The associate superintendent for supportive services should:

--Oversee the revision of the purchase order form to include a specific "block" for designating all furniture and equipment purchases.

Supportive Services — DO NOT CONCUR - However, the object of expense subhead "05" for the identification of furniture and equipment in MCPS accounts will be reemphasized by the budget office, and procurement and accounting divisions for control purposes. The director, Department of Budget Planning and Development, has already begun work toward this objective. The two additional recommendations pertaining to the recommended "block" on the purchase order are not required because of the use of the "05" object of expense subhead.

Chapter 4
4-15 Recommendation

DEA — The superintendent should specifically advise school and office officials of the importance to MCPS of maintaining financial and physical control of furniture and equipment in accordance with regulations, and it should be made clear that how well they control the assets entrusted to them will be taken into consideration in their performance evaluations.

Supportive Services — PARTIALLY CONCUR - Administrators will be advised of control responsibilities in the revised MCPS regulation concerning "Control of Furniture and Equipment Inventory."

DEA — The director of the Department of School Services, should assure that the Property Management Staff (1) makes continuous, independent verifications and tests of selected school and office physical inventories by selecting random samples of equipment from the perpetual inventory lists and physically inspecting the equipment in the samples; and (2) eliminates inaccurate serial numbers and overstated inventories.

Supportive Services — DO NOT CONCUR - (1) The administrative regulation (EDC-RA) for the "Control of Furniture and Equipment Inventory" is the same Regulation No. 235-6, dated June 9, 1980. This regulation (235-6) indicates that the Division of Auditing (now the Division of Administrative Analysis and Audits) is responsible for making independent verifications by random sampling of the inventory listing. It was never intended for the Division of Supply and Property Management to assume this audit function.

At the request of state auditors, staff has made inventory verifications in the company of state auditors and had the following results:

Schools Visited	Audited Items	Physical Inventory Item Discrepancy	% Error
33	1,048	50	5

Absent the opportunity to review DEA physical inventory audit data that reports a 31.7 percent discrepancy rate, 5 percent appears to be a more appropriate assessment of inventory accuracy than DEA's stated 31.7 percent.

Item (2) has been addressed and maintenance of the record will continue.

DEA — The director of the Department of Educational Accountability should assure that the internal audit staff verify and test the accuracy of physical inventories periodically.

Supportive Services — CONCUR - During the course of scheduled school audits by DEA, furniture and equipment verification and testing would be proper. Results should be promptly brought to the attention of the Division of Supply and Property Management for resolution.

Chapter 5
5-13 Recommendations

DEA — The associate superintendent for supportive services should:

--Insure that proper documentation is submitted to property management in support of all significant changes resulting from school and office physical inventories.

Supportive Services — CONCUR - Supporting documentation for all significant changes resulting from school and office physical inventories are required.

DEA — --Direct the development, revision, and updating of all furniture and equipment procedures and regulations and have the information included in a Property Control Manual which should also include the catalog of supplies, furniture, and equipment discussed in Chapter 2. It should be widely distributed throughout MCPS and required to be used by all concerned.

Supportive Services — PARTIALLY CONCUR - MCPS Regulation EDC-RA, Control of Furniture and Equipment Inventory, is currently under revision. There is no plan to produce a Property Control Manual.

Chapter 5
5-14 Recommendations

DEA — The director, Department of School Services should:

--Oversee the development and implementation by property management of a formal follow-up system and a monthly progress reporting system on the quality and timeliness of school and office inventories.

Supportive Services — PARTIALLY CONCUR - The director, Department of School Services, is informed as required of the progress and status of the Furniture and Inventory System.

The quality and timeliness of school and office inventories continues to improve as described below:

Category	Due In Property Management	Corrections Recorded
PE, Health...	December 3, 1984	Jan., 1985
Cafeteria	January 2, 1985	Jan., 1985
Art	February 1, 1985	Feb., 1985
Music	March 1, 1985	Up-to-date
Business/Math	April 1, 1985	Up-to-date

DEA — Submit an annual report to the superintendent and the Board of Education on (1) status of the furniture and equipment inventories, and (2) the progress, problems, and actions taken by Property Management to exercise management control over the furniture and equipment inventories including an assessment as to the extent of compliance with policies and procedures by schools and offices. Financial data in these reports should be verified by the Division of Accounting.

Supportive Services — DO NOT CONCUR - The superintendent and Board of Education now receive adequate administrative and financial reports. The associate superintendent for supportive services will recommend to the superintendent whenever additional reporting may be required.

Chapter 6
6-12 Recommendation

DEA — The associate superintendent for supportive service should:

--Instruct the Property Management office to undertake a continuous study and evaluation program for upgrading and improving the inventory control system on a cost-effective basis.

Supportive Services — PARTIALLY CONCUR - Supportive services continues to seek methods for improving supply management systems and programs on a cost-effective basis in coordination with other interfacing systems such as accounting.

DEA	--Direct Property Management staff to adopt a system of Bar Codes as a means of identifying and controlling the MCPS furniture and equipment inventories.
Supportive	DO NOT CONCUR - However, staff will examine the proposed "Bar Code" method of assisting the identification and control of MCPS furniture and equipment inventories. However, cost benefit considerations are important, but earlier proposals were found uneconomical.
DEA	--Assure that the inventory control system receives adequate data processing support by directing Property Management staff to pursue its legitimate needs through proper management channels.
Supportive Services	PARTIALLY CONCUR - Adequate data processing support has been provided. Procedures for obtaining additional support are known by supportive services staff.

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ABBREVIATIONS

BOE	Board of Education
CTMRB	Computer Technology Management Review Board
MCPS	Montgomery County Public Schools
USDA	U.S. Department of Agriculture

CHAPTER 1

INTRODUCTION

Accurate records of fixed assets enable management to exercise both financial and physical control over these costly and important resources. They evidence the financial control maintained by management over the expenditure of funds made available by county taxpayers for the acquisition of fixed assets, and they are the means by which managers can exercise effective physical control over the full use and proper disposition of fixed assets entrusted to them for educational purposes.

Information on fixed assets is also needed by the superintendent and the Board to help them satisfy their legal and political responsibilities, for determining and demonstrating compliance with the various finance-related legal and contractual provisions, and to assure acceptable organizational performance and effective management accountability.

A mature fixed assets record system can also be expanded to (1) support repair and preventative maintenance programs, (2) provide important proof-of-loss evidence when insurance claims are filed, and (3) serve as a basis for computing depreciation on Enterprise Fund assets. These expanded features can accrue to MCPS after the recommendations in this report are adopted and the new fixed asset accounting system is installed.

BACKGROUND

In its most recent history, MCPS has been developing and maintaining a system of financial and physical control over furniture and equipment inventories. However, much remains to be done.

From 1976 until late 1980, MCPS faced a growing gap between its requirements for maintaining the inventory record of fixed assets and the actual status of the physical assets.

A staff committee in 1977 expressed concern for the status of the furniture and equipment inventory. Specific committee recommendations included simplifying the system, enforcing MCPS regulations, reactivating summer inventory teams, improving computer programs, training school staffs, and providing school time to conduct inventories. However, in the MCPS ranking of administrative and educational tasks, the inventory process was not placed very high.

The Fiscal Year 1978 report of the county government's Office of Legislative Oversight and various management letters from the MCPS external auditors highlighted problems with the implementation of the then existing system. At the same time, both reports indicated that the existing inventory system itself could be a workable one if the following problems were solved:

1. The furniture and equipment inventory responsibility has been a low priority for school system administrators.

2. Methods of enforcement and control are lacking.

3. A capitalization policy (criteria for defining a fixed asset) has not been established.

4. The data base for the inventory has become outdated.

5. Resources for inventory verification have been removed from the budget.

During their review of and action on the MCPS Fiscal Year 1980 Operating Budget, both the county executive and the County Council cited statements made about the status of the inventory as a primary reason for reducing the furniture and equipment request by approximately $300,000. During the Fiscal Year 1981 Operating Budget Review, the county executive again recommended a reduction of $300,000 in furniture and equipment funds because of the status of the inventory. The superintendent's response, including a plan for improved management of the furniture and equipment inventory, resulted in a reduction of only $100,000.

Actions Taken

The first steps for improving the furniture and equipment inventory were the establishment of a property manager position and the adoption of a revised capitalization policy.

On August 12, 1980, the Board of Education approved the superintendent's recommendation for the assignment of the MCPS property management responsibility to the renamed Division of Supply and Property Management. A property manager was to work with principals/program directors in coordinating and guiding a systemwide physical count of furniture and equipment items meeting the new capitalization criteria and updating the records based upon the results of the new criteria and physical counts.

On September 8, 1980, the Board of Education approved the MCPS policy for capitalization of (1) furniture and equipment above $75 per item; (2) all items with a manufacturer's serial number; (3) high risk, low cost items such as cassette tape recorders and small calculators; and (4) student desks, chairs, and tables by lot and by school.

MCPS REGULATION FOR CONTROL OF FURNITURE AND EQUIPMENT INVENTORY

MCPS Regulation EDC-RA: Control of Furniture and Equipment Inventory was amended to incorporate the new capitalization criteria. It sets forth guidelines and procedures for the control of furniture and equipment owned by MCPS and establishes responsibility for the maintenance of the inventory records.

The primary objectives of the inventory system are to (1) encourage full utilization of MCPS property and (2) facilitate effective property management and control. Maintenance of accurate property records and physical inventories and the assignment of control responsibility are stated as ways in which these objectives can be achieved.

Assignment of responsibilities are specific. **The appropriate administrator (principal, central office manager, area associate superintendent, project director, department or division director) is responsible for the accountability and records maintenance of all items of furniture and equipment acquired or disposed of regardless of source or reason.** Although the principal may assign secondary responsibility to department chairpersons and resource teachers, **the principal is responsible for the maintenance of the school's complete inventory records.** Additionally, any individual to whom MCPS furniture and equipment is entrusted is responsible for the use, care, and protection of that property.

PROGRAM STATISTICS

At the end of fiscal year 1984, the MCPS reported a furniture and equipment inventory of over $59 million, a net increase of almost $5.7 million since the preceding fiscal year.

During fiscal year 1984, over 30,500 items valued in excess of $7.4 million were added to the inventory; and 17,900 items valued at $1.8 million were deleted from the inventory because they were sold, were lost, could not be identified, were under the inventory value, or were deleted for other similar reasons. In addition, 11,200 items valued at $400,000 were consolidated on the perpetual inventory records; and 6,200 items valued at almost $1.7 million were transferred among the schools and offices.

Except for the taking of physical inventories, the furniture and equipment records are essentially maintained by three staff members -- two in the Division of Supply and Property Management and one in the Division of Accounting.

PROGRAM MANAGEMENT

The Division of Supply and Property Management is responsible for maintaining central control records of movable property for the entire school system. This includes such functions as accounting control of perpetual inventory files, creation of new inventory records for purchases, establishment of procedures to assure that reported changes are made promptly and accurately, notification to schools of deficiencies in data and/or forms preparation, and other related functions. The Division of Supply and Property Management coordinates the continuing cycle of physical inventories of furniture and equipment; adds donated items and items purchased from non-MCPS funds to the inventory records; deletes lost, stolen, traded, or junked items from the records; and records transfers of items from one location to another.

In actual practice, the Division of Accounting maintains accounting control of perpetual inventory records and creates inventory records for new purchases. Accounting coordinates and controls all input from the Division of Supply and Property Management to the Division of Data Processing Operations and maintains the fixed asset group of accounts in the general ledger for financial reporting purposes.

The Master Inventory List produced by the Division of Data Processing Operations is a detailed listing of all MCPS furniture and equipment, organized by individual schools and offices and by inventory categories. It is a subsidiary record to the general ledger control account for furniture and equipment and is used as a detailed property control record by the Division of Supply and Property Management and by the schools and offices.

The ultimate responsibility for management and control of furniture and equipment resides with the administrators, directors, school principals, and managers.

Physical Inventory Procedures

Each month the associate superintendent for supportive services sends a letter and instructions to schools and other locations along with a computer printout of furniture or a different category of equipment. The letter requests that the recipient (1) physically inspect the items and verify that the type, model number, and serial number are recorded correctly on the inventory printout; (2) add newly purchased equipment to the inventory printout and attach a copy of the purchase order, if appropriate; (3) state reasons for items being deleted from the inventory printout; and (4) have the responsible official sign the revised inventory printout to verify that it is correct as recorded or modified. Finally, the recipient is asked to return the inventory printout to the property management office by a specified date, usually in about a month.

The property management office records the date it receives the revised computer printout of physical inventories taken by each school or other location and reviews the inventory printout for obvious errors. The changes and corrections noted on the revised physical inventory printouts are then recorded on MCPS Form 310-80: Furniture and Equipment Inventory Property Report: Multiple Transactions. These forms are forwarded to the Division of Accounting and then to the Division of Data Processing Operations so that the furniture and equipment inventory records can be corrected and updated.

OBJECTIVES OF REVIEW

The objectives in this review were to determine (1) whether all furniture and equipment was being capitalized in accordance with MCPS criteria, (2) the degree of management control exercised over the use of furniture and equipment, (3) the accuracy and completeness with which the physical inventories are taken, and (4) the relative accuracy of the inventory records. Corollary objectives were to ascertain whether administrators, directors, principals, and managers fulfilled the responsibilities assigned to them for the furniture and equipment under their control and whether they were held accountable for failure to reasonably fulfill those responsibilities.

Details on the scope and methodology of this review are contained in Appendix I.

CHAPTER 2

CRITERIA FOR CAPITALIZING INVENTORIES NEED TO BE REVISED

MCPS capitalization policy includes certain criteria which are difficult to apply uniformly in actual practice and which result in a large quantity of low dollar-value inventories. Current capitalization policy needs to be revised.

Appropriate changes to capitalization policy would enable MCPS staff--accounting, budgeting, procurement, property management, account managers, and individual users--to (1) accurately and uniformly identify all furniture and equipment to be capitalized, (2) save the time and costs spent in interpreting and applying the policy to questionable and borderline cases, and (3) provide management with greater certainty that the capitalization policy is being accurately and uniformly applied to a reasonable base of furniture and equipment inventory.

Current capitalization policy was adopted on September 9, 1980, and is as follows:

> "Resolved, That the MCPS policy for capitalization of furniture and equipment be raised from $20 per item to $75 per item and that all items with a manufacturer's serial number and high risk, low cost items such as cassette tape recorders and small calculators be inventoried as well as student desks, chairs, and tables by lot and by school (size and height of student furniture will not be a factor in the physical inventory process)." [Resolution No. 546-80]

In 1981, the furniture and equipment inventories were reviewed, and $4.5 million was eliminated from the inventory so that it would conform to the then revised capitalization policy. Thus, the current inventory items are those that were reviewed and retained under the revised policy or are new items added since then.

LARGE QUANTITY, LOW-VALUE INVENTORY

A large quantity of furniture and equipment under $75 still remains on the inventory in spite of the $75 per item limit. Seventy-six percent of the total inventory quantity is under the $75 limit, yet it represents only 11 percent of the total dollar value. Most of this is furniture. Furniture represents 75 percent of the total quantity, but only 17 percent of the total dollar value. Conversely, equipment represents 25 percent of the total quantity and 83 percent of the total dollar value. A breakdown of total furniture and equipment over and under $75, as of June 30, 1984, is shown in Table 1 and graphically in Appendix III.

TABLE 1

Summary of Inventories
As of June 30, 1984

	Furniture		Equipment		Totals	
Unit cost	Quantity	Value	Quantity	Value	Quantity	Value
Under $75	338,063	$ 5,274,071	38,606	$ 1,320,822	376,669	$ 6,594,893
Over $75	33,733	4,979,377	86,330	47,844,265	120,063	52,823,642
Totals	371,796	$10,253,448	124,936	$49,165,087	496,732	$59,418,535
Percentage						
Under $75	68	9	8	2	76	11
Over $75	7	8	17	81	24	89
Totals	75	17	25	83	100	100

A further analysis of the inventory under $75 discloses that the average unit cost is only $17.51, with the greatest concentration of items in the $6-$10 range. Table 2 and the Exhibit on p. 2-4 show a more detailed breakdown of furniture and equipment under the $75 limit.

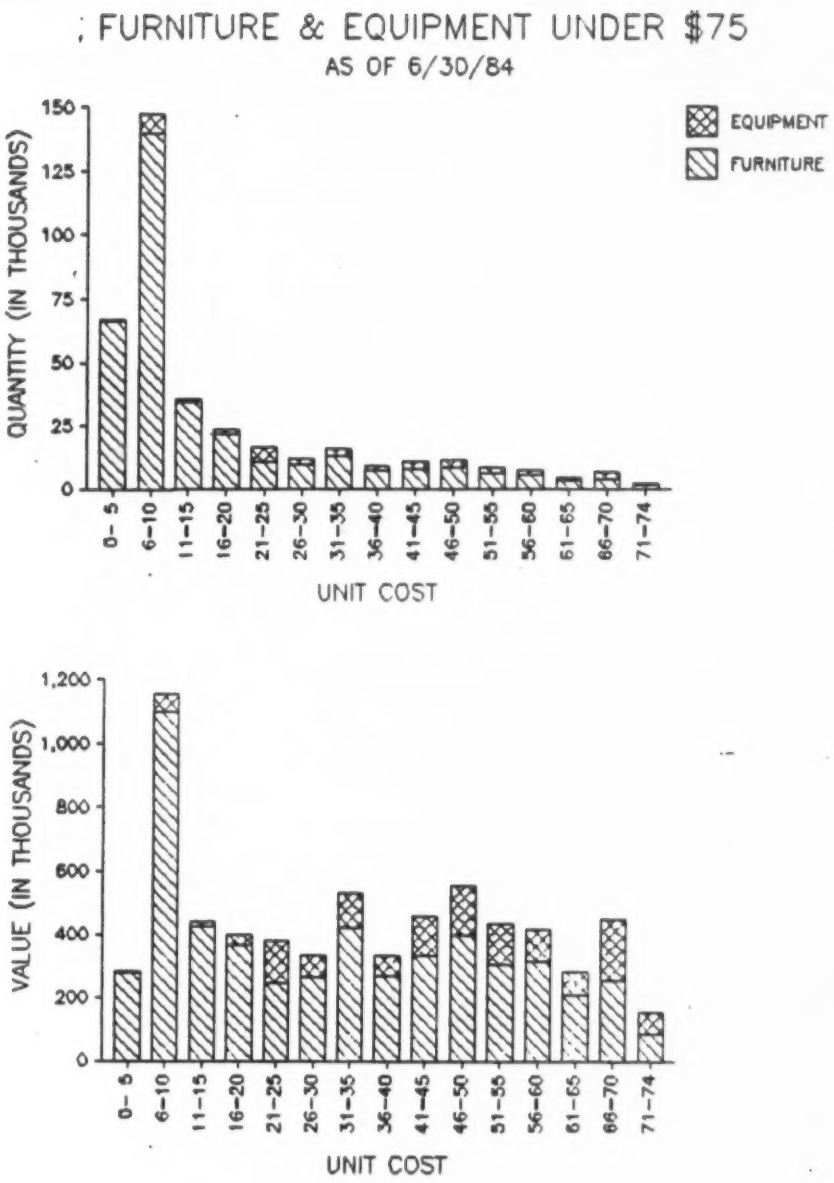
TABLE 2

Furniture and Equipment Under $75
As of June 30, 1984

Unit Cost	Furniture		Equipment		Total	
	Quantity	Value	Quantity	Value	Quantity	Value
0- 5	66,621	$ 280,340	604	$ 2,106	67,225	$ 282,446
6-10	140,081	1,101,614	7,406	52,505	147,487	1,154,119
11-15	34,396	426,126	881	12,160	35,277	438,286
16-20	21,338	364,610	1,771	33,893	23,109	398,503
21-25	10,819	247,476	5,517	133,712	16,336	381,188
26-30	9,334	264,612	2,371	67,627	11,705	332,239
31-35	12,821	418,878	3,242	111,199	16,063	530,077
36-40	7,056	269,373	1,720	66,246	8,776	335,619
41-45	7,824	331,800	2,888	124,314	10,712	456,114
46-50	8,262	398,229	3,172	155,292	11,434	553,521
51-55	5,842	307,380	2,426	128,288	8,268	435,668
56-60	5,437	315,068	1,697	99,292	7,134	414,360
61-65	3,306	208,782	1,164	73,694	4,470	282,476
66-70	3,731	253,134	2,825	193,593	6,556	446,727
71-74	1,195	86,649	922	66,901	2,117	153,550
Totals	338,063	$5,274,071	38,606	$1,320,822	376,669	$6,594,893
Average Cost		$15.60		$34.21		$17.51

A summary listing of most of the items under $75 is shown in Appendix IV. The largest volumes of items are student chairs, tables, desks, file cabinets, and similar furniture with average values ranging from almost $6.00 to $55.00. The largest volumes of equipment are 3,125 record players and 2,083 cassette recorders at an average value of about $54.00.

EXHIBIT 1


; FURNITURE & EQUIPMENT UNDER $75
AS OF 6/30/84
EQUIPMENT
FURNITURE
QUANTITY (IN THOUSANDS)
150
125
100
75
50
25
0
0- 5
6-10
11-15
16-20
21-25
26-30
31-35
36-40
41-45
46-50
51-55
56-60
61-65
66-70
71-74
UNIT COST
VALUE (IN THOUSANDS)
1,200
1,000
800
600
400
200
0
0- 5
6-10
11-15
16-20
21-25
26-30
31-35
36-40
41-45
46-50
51-55
56-60
61-65
66-70
71-74
UNIT COST

POLICY DIFFICULT TO APPLY

A review was made of current furniture and equipment procedures to find out how new purchases got on the inventory, with particular emphasis on the interpretation of the $75 capitalization criteria. Capitalization policy is interpreted and applied to individual purchases by one of two account clerks, one in Accounting and one in Property Management. Each month the account clerk in Accounting reviews several hundred checks and related invoices and purchase orders to identify new furniture and equipment purchases. All furniture is capitalized. Crucial criteria for capitalizing equipment are whether the item costs $75 or more and whether it has a manufacturer's serial number. If it does not, it is not usually capitalized. However, consistent with policy, exceptions are made for high risk, low-cost items such as cassette tape recorders and small calculators. Most decisions are clear-cut, but there are always new items and borderline cases that are subject to differing interpretations and opinions.

Once it has been determined that an item is to be capitalized, a property code number is selected from MCPS Table 36: Code and Descriptor File, a list of specific property codes identifying the various furniture and equipment categories. If a particular item of equipment is not listed on Table 36, a preliminary number is assigned by Accounting and later finalized by Property Management if it agrees the item should be capitalized. If the Property Management account clerk does not believe the item should be capitalized, it is deleted from the furniture and equipment inventory and recorded by Accounting.

In reviewing only one months' transactions, a number of apparently differing decisions in interpreting capitalization policy were identified. For example, an enlargement lens valued at $29 did not appear to fit the capitalization criteria, but was capitalized. The explanation was that the lens was capitalized because that item was on MCPS Table 36. On the other hand, two tap and die sets valued at $52 and $55 were not capitalized although tap and die sets are also listed on MCPS Table 36. The explanation was that these tool and die sets did not meet the $75 capitalization criteria.

A Wimshurst static machine valued at almost $74 was not capitalized. In response to the question of whether or not it had a serial number, the answer was that it is difficult to get serial numbers even though they are supposed to be entered on the receiving copy of the purchase order before being sent to Accounting. The account clerk explained that each month requests for serial numbers are made to schools, but the requests are generally ignored. It was estimated that during the previous month 12 requests for serial numbers had been made; however, there were only two responses.

To obtain a broader perspective on capitalization policy, MCPS decisions on furniture and equipment capitalized for April 1984 were compared with an alphabetical listing of Supplies and Equipment maintained by the Anne Arundel County Public Schools for its Property Control System and a Supplies and Equipment listing published by the Maryland State Board of Education in its Financial Reporting Manual. (See Appendix V.) Anne Arundel County has eliminated its previous $50 inventory limit and presently has no

established minimum dollar value for capitalization purposes. Consistent with its currently established capitalization policy, it has made individual decisions on whether an item is "Supplies" or whether an item is "Equipment" and has published the results in a manual for the use of staff throughout the school system. In only those instances when an item is not on the list, does an interpretation of capitalization policy need to be made and the item added to the list, if appropriate.

A summary of the comparisons is shown in Table 3.

TABLE 3

Comparison of MCPS Capitalization Decisions with Others

Item description	Amount	MCPS Table 36	Anne Arundel	Md. BOE
Capitalized by MCPS				
Enlargement lens, 50 mm	29.00	Yes	No	No
Square socket & extension	11.85	No	No	No
Cassette recorder	64.50	Yes	Yes	Yes
Bookcase	44.97	Yes	Yes	Yes
Not capitalized by MCPS				
Wimshurst static machine	$ 73.56	No	No	Yes
Six shelf, open shelving, 2 sets @ $44.80	89.60	Yes	Yes	No
Pollenex dual air treatment system	64.75 (a)	No	No	No
Axel stands, 2 @ $41.26	82.52	Yes	Yes	No
Tap & die set	54.77	Yes	Yes	Yes
Tap & die set	51.66	Yes	Yes	Yes
Water bath, 2 @ $45.05	90.10	No	Yes	Yes
Calculator	11.99	Yes	No	Yes
Camera kits, 4 @ $16.40	65.60	Yes	Yes	Yes
Camera tripods, 6 @ $27.00	162.00	Yes	Yes	Yes

(a) Under MCPS criteria this could have been capitalized as a "high-risk, low cost" item.

The foregoing comparisons reveal that there is no true consistency within MCPS or between and among the other systems. The most important factor, however, is consistency within an individual system. Both account clerks in Accounting and in Property Management believed that MCPS Table 36 with an expanded list of equipment would be the best guide for them to use in uniformly applying capitalization policy.

Some thought has apparently been given to the difficulties associated with the current capitalization policy, but little action has been taken. On September 7, 1983, a meeting was held on the "capitalization of movable furniture and equipment." The meeting was attended by representatives of the Divisions of Accounting, Property Management, Construction and Capital Projects, and Insurance and Retirement. No conclusions were reached at this meeting and no further meetings were scheduled.

CONCLUSIONS

Well-founded policies are the cornerstone upon which any good management system is founded. Without such guidance, a system will lack management direction and control.

Current capitalization policy is difficult to apply uniformily, has contributed to inconsistencies in the capitalization of equipment and has added additional burdens to the already cumbersome recordkeeping system.

MCPS administrators rather than account clerks should have the responsibility for determining, within policy guidelines, what furniture and equipment should be capitalized as financial assets and controlled physically. This could be readily accomplished by the development of a supplies, furniture and equipment catalog--a complete and comprehensive list of all supplies, furniture and equipment that the administration believes is appropriate for MCPS to capitalize as fixed assets and to control physically. Otherwise, the items should be designated and shown as supplies and not controlled physically.

The catalog should be developed by a select committee composed of the directors of Accounting, Property Management, and Maintenance; representatives of the central and area offices; school principals; and others. This committee should use the alphabetical list of Supplies and Equipment shown in Appendix B from the State of Maryland Financial Reporting Manual (Appendix V) as a basis for revising and updating MCPS Table 36 which would then become the MCPS Catalog of Supplies, Furniture, and Equipment. Interim decisions on items not included in the new MCPS catalog should be made by Property Management and later confirmed or rejected at a meeting of the full committee. This arrangement would provide a new dimension to management oversight of capitalization policy which does not now exist and would encourage the sharing of responsibility for financial and physical control of furniture and equipment by all concerned. Furthermore, the catalog would provide uniformity and stability for the capitalization and control of furniture and equipment throughout MCPS.

RECOMMENDATIONS

The superintendent should request the Board to revise the capitalization policy to eliminate the $75 minimum guideline criteria and the manufacturers serial number criteria.

In lieu thereof, the superintendent should establish a select committee charged with developing and periodically updating a MCPS Catalog of Supplies, Furniture, and Equipment--a complete and comprehensive list of

supplies, furniture and equipment that is deemed appropriate for MCPS to capitalize as fixed assets and to control physically or to designate as supplies and not control physically.

CHAPTER 3

ACCURATE AND COMPLETE RECORD OF NEW PURCHASES VIRTUALLY IMPOSSIBLE UNDER PRESENT PRACTICES

Accounting for the acquisition of new furniture and equipment is a confusing and imprecise process because of ambiguous MCPS budget guidelines for lease/purchases of equipment and the accepted practice of charging furniture and equipment purchases to Contractual Services accounts and sometimes other accounts. As a result, identifying and capitalizing new equipment purchases is costly, cumbersome, and time-consuming; and MCPS has no assurance that its additions to general fixed assets for newly acquired furniture and equipment are substantially accurate or complete. Better methods for identifying furniture and equipment purchases are needed.

GUIDELINES FOR LEASE/PURCHASES

Standard No. 13 of the Financial Accounting Standards Board provides for the capitalization by lessees of leases when substantially all of the benefits and risks of ownership of the leased property have been transferred to the lessee. MCPS calls these leases "capital leases" for which the full purchase price of the equipment should be capitalized as a general fixed asset in the first year of acquisition.

During Fiscal Year 1984, MCPS acquired over $620,000 of equipment through capital lease arrangements and charged only the current year's payments to "contractual services" accounts rather than charging the full amount to the furniture and equipment accounts. These leases were for the purchase of computers and duplicating equipment for schools and offices, on the installment basis by the use of current and future years' funds.

Use of the Contractual Services accounts for lease/purchases is sanctioned by budget instructions issued by the MCPS Department of Budget Planning and Development. These instructions define a contractual service item as:

> "... an arrangement for <u>services</u> to be performed by a business or agency, or an individual who is not an MCPS employee.... <u>All lease/purchase</u> or rental agreements must be listed as line items." (Underscoring provided).

Discussing the budgeting of purchased items within the Contractual Services account, an account that is supposed to be used for <u>services</u> performed by those outside of MCPS, creates ambiguity and leads to misinterpretation and confusion in the use of this account.

Furthermore, the use by MCPS of expenditure object 02, Contractual Services accounts, to purchase equipment through capital leases is not supported by the definition of Contracted Services in the Maryland State Board of Education's uniform system of budgeting and reporting. The Maryland State Board of Education defines Contracted Services in its <u>Financial Reporting Manual</u> as "Expenditures for services performed by persons who are not on the LEA payroll, including equipment repair." The Manual further describes

Contracted Services to include the repair and maintenance of vehicles, private bus operators, public carriers, bus inspections, physical examination of bus drivers, outside food services, auditing and legal fees, data processing equipment rental, and so forth. No mention is made of purchasing arrangements.

The MCPS budget instructions have established a pattern that MCPS officials and staff now follow in budgeting and acquiring lease/purchases through Contractual Services accounts and such a pattern will be difficult to change. The budget for Contractual Services is, historically, approved much more readily than is the budget for Furniture and Equipment. Also, including only the current years' installment in the contractual services budget allows for more consistent and uniform budgets over the years and, thus, the estimates are more readily accepted by budget reviewers. Furniture and equipment budgets, on the other hand, are susceptible to greater fluctuations over the years, are scrutinized much more closely, and are often subjected to arbitrary budget cuts.

MANY DIFFERENT ACCOUNTS USED

The inventory accounting system is hampered by the accepted practices of those involved in the acquisition process to purchase equipment from Contractual Services accounts, and sometimes other accounts. Because many different accounts are used, the Division of Accounting must go through an elaborate process of reviewing purchases charged to these innumerable accounts each month, to identify equipment purchases and then enter them on the inventory records. In April 1984, for example, Accounting received a 20 page computer report entitled "List of Items to be Inventoried." This report contained 462 line items, supported by 306 checks, purchase orders, and related documents. This report and many supporting doucments had to be reviewed by Accounting, for identifying furniture and equipment purchases to be capitalized for April.

Through this type of review process, the Division of Accounting identified equipment purchases charged to nonequipment accounts in Fiscal Year 1984, as shown in Table 4.

TABLE 4

Equipment Purchases Charged
To Non-equipment Accounts

Account Charged	Amount
02 Contractual Services	$263,000
03 Materials and Supplies	30,700
04 Other costs	9,200

Results of the review process are uncertain, at best. There is no assurance that equipment purchases were not made from accounts that are not included in the screening process and there are too many accounts for all to be screened. That other non-equipment accounts are used to purchase equipment is evidenced by the fact that the routine review process, performed by one group in the Division of Accounting, identified and capitalized equipment lease/purchases of $263,000 in Fiscal Year 1984, even though another group in Accounting identified actual lease/purchases of over $620,000 in that fiscal year. This matter was brought to the attention of the director of accounting for corrective action.

CONCLUSIONS

The variety of accounts used and procedures followed make it virtually impossible for the Division of Accounting to assure the accurate identification and complete capitalization of all furniture and equipment purchased by MCPS. As a result, there is inadequate management control over the accounting for furniture and equipment purchases in MCPS.

The more correct and logical approach for MCPS to follow for proper capitalization of furniture and equipment purchases would be to budget and account for furniture and equipment only through the furniture and equipment expenditure accounts, whether items are acquired by outright purchase or on an installment basis through lease/purchase agreements. However, the budget cycle for Fiscal Year 1986 is already completed, so it would be impossible to implement this approach immediately. Thus, a two phased approach would be more appropriate, as follows:

-- Adopt a procedure for identifying all furniture and equipment purchases so that they can be capitalized as fixed assets regardless of the account charged, and

-- revise the future budget structure so that all funds for furniture and equipment purchases, including lease/purchases, are included in expenditure object 05, Furniture and Equipment.

To achieve the first phase of the approach, the purchase order form should be revised to include a "block" for the account manager to designate furniture or equipment purchases regardless of the expenditure account being charged. This designation should be based upon the MCPS Catalog of Supplies, Furniture, and Equipment which MCPS management has determined should be capitalized, as discussed in Chapter 2. This procedure would provide a consistent and uniform approach to the capitalization process because the initial decision by the account manager could be verified and corrected, if necessary, by the Divisions of Procurement and Accounting. Inappropriately marked purchase orders could be rejected by the Division of Procurement. Furthermore, all correctly marked furniture and equipment purchase orders could be identified by Accounting for subsequent capitalization when the related invoice is paid.

To achieve the second phase of the approach, the Department of Budget Planning and Development would need to change its budget guidelines by (1) revising its definition of contractual services to exclude lease/purchases and (2) instructing all account managers to budget for future equipment

and (2) instructing all account managers to budget for future equipment purchases in expenditure object 05, Furniture and Equipment accounts. The Department of Budget Planning and Development would also need to reconstruct the budget "history" of furniture and equipment purchases in prior years by transferring all equipment costs charged to non-equipment accounts in prior fiscal years to the 05 accounts for those same fiscal years.

Handling the "history" in this way would serve the double purposes of (1) requiring managers to identify contractual services funds previously used for lease/purchases so that overall budget totals remain level for each unit and (2) avoiding a sudden large increase in the Furniture and Equipment accounts in the first year of this revised procedure, thus calling unnecessary attention to what would otherwise be relatively routine items.

RECOMMENDATIONS

The associate superintendent for supportive services should:

-- Oversee the revision of the purchase order form to include a specific "block" for designating furniture and equipment purchases.

-- Issue instructions to insure that the "block" for designating furniture and equipment on purchases orders be used by all account managers, when applicable, regardless of the expenditure account to be charged.

-- Take whatever actions are necessary to assure that (1) requisitions for furniture and equipment purchases are approved by the Division of Procurement only if the furniture and equipment block is so designated and the items are listed in the MCPS catalog, (2) the Division of Accounting capitalize all furniture and equipment designated on the purchase order regardless of the expenditure account charged, and (3) the Division of Accounting report annually on the amount of furniture and equipment which was capitalized from each expenditure account, until the revised budget structure is in place and operating.

The Department of Budget Planning and Development should:

-- Revise its budget preparation guidance to provide that all future furniture and equipment purchases, including those acquired by lease/purchase, be budgeted in expenditure object 05, Furniture and Equipment accounts.

-- Reconstruct (in cooperation with unit managers) the budget history of prior years' furniture and equipment purchases and incorporate the revised information in the budget for Fiscal Year 1987.

The superintendent should discuss the revised approach to budgeting and accounting for furniture and equipment with the Board of Education, the County Council, and the County Executive so that they can better understand the reasons for the changes and not misconstrue the changes as increases in the amount MCPS is spending on capital improvements.

CHAPTER 4

ACCURACY AND COMPLETENESS OF PHYSICAL INVENTORIES IS DOUBTFUL

Extensive tests and reviews of physical inventories by the internal audit staff, made in conjunction with schools and offices staffs, disclosed a large number of items which could not be located and a large number of other discrepancies in the inventory records. Furthermore, a special analysis of serial numbers disclosed numerous inaccuracies and overstated inventories of about $500,000. These findings suggest that physical inventories are being taken and reported without reasonable care being exercised to assure that the information are accurate, current, and complete. And, the records are being changed accordingly. Independent verifications and tests of physical inventories are necessary.

To determine how well MCPS staff verify the existence of physical inventories and how accurately the perpetual inventory records are maintained, the DEA internal audit staff made physical verifications of selected inventories. These verifications were performed in two ways. Randomly selected computer printouts of over 900 inventory items valued at $1.1 million were used for verifying the existence of physical assets at schools and offices. While visiting these locations, the audit teams also randomly selected serial numbers and other identifying data from almost 1,000 additional items of equipment and then compared that information to the perpetual inventory records. The results of these tests are discussed in this chapter.

VERIFYING RECORDS TO ASSETS

The audit teams found an overall discrepancy rate of about 32 percent when they compared information from the selected inventory printouts to the physical assets. The total number of discrepancies for schools (148) and for central/area offices (142) was about the same. Offices had a greater percentage of discrepancies because their total sample (380) was smaller, and schools had a greater percentage of dollar discrepancies because the value of their total sample ($54,250) was smaller. The total dollar value of all discrepancies was about $196,000. This information is detailed in Table 5.

Generally speaking, most of the discrepancies could be classified as EQUIPMENT NOT LOCATED because a description on the perpetual inventory record could not be directly related to an existing physical asset. Such an explanation is overly simplistic, however, and not too meaningful. Therefore, to explain the problems more accurately, the discrepancies have been grouped into three categories: (1) equipment not located--no explanation, (2) equipment not located--explanation offered, and (3) equipment probably located--identity not certain.

TABLE 5
Inventory Discrepancies
Records Traced to Assets

Type of Discrepancy	Schools		Central/Area Offices		Totals	
	Numbers	Percents	Numbers	Percents	Numbers	Percents
Not Located	56	10.5	54	14.2	110	12.0
Loaned or Transferred/ no receipt	8	1.5	36	9.5	44	4.8
Traded/Replaced	4	.7	9	2.4	13	1.4
Stolen/Junked, etc. no record	2	.4	9	2.4	11	1.2
Previously Unlocated/ Deletion Requested	8	1.5	0	0	8	.9
No Positive Identification/Items Grouped	42	7.9	18	4.7	60	6.6
Identity Inaccurate/ Incomplete	27	5.1	15	3.9	42	4.6
Duplicate Record/ Extra Item	1	.2	1	.3	2	.2
Totals	148	27.7	142	37.4	290	31.7
Total Sample	534		380		914	
Percentage of Error		27.7		37.4		31.7
Value of Discrepancies		$54,250		$141,428		$195,678
Value of Sample		$196,400		$917,200		$1,113,600
Percentage of Error		27.6		15.4		17.6

Equipment Not Located--No Explanation

Some equipment listed on the inventory printouts simply could not be found and the staffs could not explain why the items could not be located. Over

12 percent, or 110 items, of equipment listed on the sample inventory printouts could not be located for the audit teams during the physical inventory verification process even though (1) the teams were directed by school and office staffs, (2) extensive searches were undertaken throughout a given location, and (3) arrangements were made for subsequent "call-back" by staffs if the items were ultimately located.

Unlocated items included typewriters, projectors, recorders, microscopes, musical instruments, TV receiver/monitors, and other equipment. At one location, for example, an electric typewriter ($495) and a vacuum cleaner ($131) could not be located, so a letter was to be written to the building service manager. At another location, the staff could not identify a $77 language receiver. At another location, the staff could not identify a 3/4-ton stand hoist ($373), although they had a new and different hoist which was not on their inventory record. Another location had no bakers' tables, even though its inventory record contained one valued at $500. Another staff had no explanation as to why a record player ($59) and a TV receiver/monitor ($525) could not be located.

Equipment Not Located--Explanations Offered

The schools/offices staffs were unable to physically locate for the audit teams 76 items of equipment representing over 8 percent of the 914 items in the total sample selected. For these items the staffs offered oral explanation as to why they could not locate the equipment. A separate breakdown of only these items from Table 5 is shown in Table 6.

TABLE 6

Explanations for Equipment Not Located

Explanation Offered	Number	Percent of Sample
Loaned or Transferred, no receipt	44	4.8
Traded/Replaced	13	1.4
Stolen/Junked, etc. no record	11	1.2
Previously Unlocated, Deletion Requested	8	.9
Totals	76	8.3

Almost half of these problems--36 items--involved Central Office loans or transfers to other locations, without receipts. Equipment is not to move from one location to another, even if the move is only temporary, without a formal transfer record being processed through the Property Management Office.

A number of special projects and offices are responsible for equipment that is located at numerous schools and other offices. Some offices have their own inventory records of where the equipment is located, and others seem to know where the equipment is located. Although these offices are responsible for equipment at other locations, they do not periodically verify that the equipment still exists at those locations. One office had a group of nine items of equipment valued at $1,423 located at nonpublic school locations, but no receipts. Staff at another office said that its videotape recorder system ($995) was at one of three possible locations. Other examples include an individual who took a manual typewriter ($159) from an office to the school to which he had been transferred; a clarinet ($185) and a tuba ($200) which were on loan to students, without receipts; and a computer ($530) which had been loaned to another office.

The audit teams were unable to physically identify 24 items from the sample inventory printouts because, they were informed, the equipment had been traded, replaced, stolen, or junked--yet the inventory records had not been changed. Most of these problems also involved Central Office locations. Some examples of traded or replaced equipment were a phototypesetter ($32,500) which had been exchanged for a new one, a school bus ($5,554) and a console stero ($2,000) which had been sold, and a tape cleaner ($250) which had been "traded six years ago."

Equipment which the audit teams were told had been stolen or junked included an impact driver set ($188) which had been stolen and no report filed, a manual typewriter ($160) which the staff "got rid of some time ago," a stroboscope ($158) which had been cannibalized, and an adding machine ($125) which had been junked without paperwork being processed.

The audit teams were also advised of equipment that was still included on the inventory printouts although staffs had previously requested they be deleted from their records. These included a vacuum cleaner ($800), drawing table ($159), and an oscilloscope ($100) whose deletion had been requested 18 months earlier. Other examples included an electric typewriter ($410) and a dishwasher ($140).

Equipment Probably Located--Identity Not Certain

In some instances, information about equipment listed on the inventory printouts were of such a nature that the audit staffs could not be certain that they had made a positive physical identification of 104 items of equipment. This represented over 11 percent of the 914 items in the total sample selection. A breakdown of only these items from Table 5 is shown separately in Table 7.

TABLE 7

Reasons for Uncertain Identification

Reasons	Number	Percent of Sample
No Positive ID/ Items Grouped	60	6.6
Identity Inaccurate/ Incomplete	42	4.6
Duplication	2	.2
Totals	104	11.4

Almost 7 percent of the sample, or 60 items, could not be positively identified because the inventory printout had no serial numbers or other unique identification or the items were grouped on the inventory printouts so that positive physical identification of a specific item of equipment could not certain. And, in 11 instances a serial number was shown on the inventory printout but could not be found on the physical assets identified to the audit teams.

Some examples follow. Equipment with no serial numbers or unique identification on the inventory printouts included an electric inflator ($206), a spray gun ($253), a flat range ($350), and a photo-visual maker ($160). Also, 10 oscilloscopes ($1,230) were grouped together on the inventory records so that it was impossible to check individual serial numbers or other descriptors. All 10 oscilloscopes had to be located and checked. Other grouped items included 10 stero microscopes ($1,844) and 5 multimeters ($625) of which only 4 were located. Items for which the serial numbers could not be found on the equipment included a TV receiver ($154), a microfilm reader ($1,170), a master cassette ($495), a duplicator ($2,070), a trash compactor ($2,275), and a sewing machine ($335).

The descriptions of 42 items on the inventory printouts, almost 5 percent of the sample, were inaccurate or incomplete. For example, a grand piano ($6,199) was misnamed and its serial number was identified on an upright piano. In another example, a gasoline engine was identified in the inventory records by different model and serial numbers than that contained on the engine shown to the audit team. Other examples included a manual press ($726) with a wrong serial number; a mobile crane ($347) with no type, model, or serial number (found by audit team); two sewing machines ($240) with wrong model numbers; a calculator ($115) with wrong name on records; and an electric typewriter ($385) identified on the records as a manual typewriter.

VERIFYING ASSETS TO RECORDS

The audit teams found an overall error rate of almost 23 percent when they compared the physical attributes of 993 selected items of equipment to related information on the perpetual inventory records. Schools had a larger number of discrepancies because their total sample was larger, while offices had a greater percentage of discrepancies. This information is detailed in Table 8.

The two types of discrepancies having the greatest significance are discussed below.

Equipment Not Identifiable to Inventory Records

During their visits to schools and offices, the audit teams noted the physical attributes of equipment such as descriptions, types, and model and serial numbers so that the equipment could be identified to perpetual inventory records. The audit teams were not able to identify 124 randomly selected items of equipment from specific school or central/area office locations to their particular perpetual inventory records. This represents 12.5 percent of the total sample, as shown in Table 8.

TABLE 8
Inventory Discrepancies
Assets Traced to Records

Type of Discrepancy	Schools		Offices		Central/Area Totals	
	Numbers	Percent	Numbers	Percent	Number	Percent
Not identifiable to inventory record	48	6.6	76	28.3	124	12.5
Identity inaccurate/ incomplete	62	8.6	6	2.2	68	6.8
No positive identification/ items grouped	27	3.7	0	0	27	2.7
Broken	4	.6	0	0	4	.4
Duplicate record	2	.3	1	.4	3	.3
Totals	143	19.8	83	30.9	226	22.8
Total Sample	724		269		993	
Percentage of Error		19.8		30.9		22.8

Records could not be identified for a broad range of equipment such as typewriters, belt sanders, projectors, calculators, adding machines, microscopes, sewing machines, recorders, computers, projectors, printers, film cleaners and similar items.

There are a variety of possible reasons why a particular item of equipment could not be identified on the Perpetual Inventory Records of a school or office where the item was located. The equipment may not have been recorded when originally leased or purchased, the record description may not have adequately identified the item, it may have been received on loan or transfer from another location which has the item on its perpetual inventory record, or it may have been improperly removed from the records during a prior physical inventory. In this latter instance, for example, a food processor could not be located during a prior year's physical inventory and had been deleted from the school's records. The audit team found the food processor at the school and were told it had been out for repairs and overlooked when the prior inventory had been taken. Regardless of what the reasons might be, the Perpetual Inventory Records are in error and should be corrected.

Identity Of Equipment Inaccurate/Incomplete

The audit staff could not be certain they had identified many items of equipment on the Perpetual Inventory Records because of inaccurate or incomplete information on the records. The identity of 68 items of equipment on the Perpetual Inventory Records, 6.8 percent of the 993 items included in the sample, were inaccurate or incomplete in varying degrees. (See Table 8.)

The most serious problem with identification was the lack of serial numbers on the records for equipment that had serial numbers. For example, the audit staff identified 8 Unitron microscopes with serial numbers, although 12 were separately listed on the records and without their serial numbers. Other items without serial numbers on the records included a mimeograph, a range burner, a security/base, a stereo microscope, a baritone saxophone, a food processor, and similar items.

Another type of serial number inaccuracy created some doubt that the item is actually on the perpetual inventory record. For example, a 20-quart mixer had an entirely different serial number from that contained on the record, suggesting that it might have been a replacement item.

A minor degree of serial number inaccuracy involved transposition errors and missing prefixes. Although minor in nature, they still created a degree of uncertainty that the record was, in fact, identifying the particular item of equipment in question. Items with inaccurate serial numbers included VTS camera lens, typewriters, a floor jack, a cassette recorder, TV receiver/monitors, a drill press, computers, and similar items.

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It is quite possible that some of the foregoing discrepancies may be satisfactorily explained or otherwise resolved by Property Management after more extensive and exhaustive research. This would still not negate the

verification results. It is more important to recognize the fact that these discrepancies are evidence of the conditions that existed at the time the physical inventories were verified and that are likely to exist when physical inventories are taken by schools and central/area offices.

A critical procedure, necessary for assuring that the system is working as intended and that physical inventories are correct, is not being performed by Property Management. The Administrative Regulation provides for Property Management to determine "...that each school/office inventory is correct by a random sampling of the perpetual inventory listing and subsequent physical inspection of the sample;...." There was no evidence that random sampling or independent verification of physical inventories was being performed by Property Management. The staff said that it took independent physical inventories only for closed schools and upon special request. Next year they plan to take certain selected physicial inventories at some schools, in lieu of it being taken by school personnel.

Taking complete physical inventories for others is not a proper role for the Property Management staff. It would relieve appropriate officials of their responsibility to take accurate and current physical inventories of their property. More efficient and effective results and broader coverage could be obtained by the Property Management staff if it were to spend its time selectively verifying and correcting a greater number of inventory records.

INVENTORIES ARE OVERSTATED

A special analysis of equipment serial numbers in the perpetual inventory records disclosed a significant overstatement of inventories resulting from duplicate entries. In addition, the analysis disclosed that the serial number "field" also contained blanks, zeros, or descriptions and measurements that are not legitimate serial numbers. A summary of this analysis is shown in Table 9.

TABLE 9

Analysis of Duplicate Serial Numbers
As of October 30, 1984

Serial Number	Line Items	Quantity	Amount
Duplicates	1,530	1,530	$ 1,055,384
Blanks	5,680	15,401	2,996,030
Zeros	9,480	31,599	5,272,592
Other	5,787	7,681	3,494,042
Totals	22,477	56,211	$12,818,048

As Table 9 indicates, $1,055,384 of the total inventory is comprised of identical, duplicate serial numbers. One-half of this amount, or about $500,000, represents an overstatement in the equipment inventory. This amount is conservative because it includes duplicates for only those items whose other descriptors were also identical. For example, it includes two serial number's 174904, each of which identified a manual typewriter ($180 and $169) with model number 1730, located at two different schools. The overstated amount does not include duplicate serial numbers when another descriptor did not agree, such as two 17757 serial numbers that identified a Projector FS ($84) and a Duplicator ($387) that were also located at two different schools.

Table 9 also discloses that nearly $3,000,000 of equipment inventory have blanks in the serial number field, and over $5,000,000 of equipment inventory had some combination of zeros in this field. In regard to "zeros," the Property Management staff informed the auditors that they were routinely adding four zeros (0000) to serial number fields as the records were being updated so that they would look more complete.

CONCLUSIONS

School and office officials should be made aware of the importance to the school system of maintaining financial and physical control of furniture and equipment entrusted to them. It should be emphasized that they are responsible for taking and reporting accurate, current, and complete physical inventories and that this matter will be considered in their performance evaluations.

Property Management should make every effort to improve the accuracy of the perpetual inventory records, with special emphasis on the serial number field. To maintain accurate records, the serial number "field" should contain a legitimate equipment serial number or a notation such as NSN (no serial number). Duplicate serial numbers, blanks, zeros, and descriptions in the serial number "field" are inaccuracies which lead to confusion and error and should be eliminated.

Property Management also has a responsibility to assure itself that furniture and equipment inventory records are accurate, current and complete. This responsibility should be fulfilled by continuous, independent verifications and tests of physical inventories, however, and not primarily by reviewing and correcting physical inventory reports prepared and "verified" by responsible school and office officials.

The internal audit staff also has a responsibility to periodically verify and test selected physical inventories.

RECOMMENDATIONS

The superintendent should specifically advise school and office officials of the importance to MCPS of maintaining financial and physical control of furniture and equipment in accordance with regulations, and it should be made clear that how well they control the assets entrusted to them will be taken into consideration in their performance evaluations.

The director of the Department of School Services should assure that the Property Management Staff (1) makes continuous, independent verifications and tests of selected school and office physical inventories by selecting random samples of equipment from the perpetual inventory lists and physically inspecting the equipment in the samples; and (2) eliminates inaccurate serial numbers and overstated inventories.

Finally, the director of the Department of Educational Accountability should assure that the internal audit staff verify and test the accuracy of physical inventories periodically.

CHAPTER 5

THE INVENTORY SYSTEM NEEDS TO BE BETTER MANAGED AND CONTROLLED

The property management inventory system is not well managed and controlled. Existing procedures for inventory management and control are obsolete, inaccurate, and misleading and there were no plans to revise and update them until after a draft of this report was issued for comment. A significant number of physical inventories are not being completed and recorded in a timely manner and responsible officials are not being held accountable for the numerous changes which they authorized to be made to their inventory records. Procedures must be revised and updated, and a management evaluation and reporting system must be developed.

PROCEDURES FOR INVENTORY CONTROL ARE INADEQUATE

MCPS Regulation EDC-RA: Control of Furniture and Equipment Inventory makes numerous references to the MCPS Furniture and Equipment Inventory Reference Manual for Administrators dated September, 1975. This manual contains a good basic framework for an inventory control system in that it explains procedures, forms, reports, and coding structures and contains other similar information.

Neither the regulation nor the manual, however, have been substantively revised or updated since 1980. Both now contain numerous inaccuracies and refer to procedures which are no longer followed and forms which are no longer used. Following are some examples:

1. The manual was prepared by the Division of Accounting and refers to Division procedures that are now handled by the Division of Supply and Property Management.

2. The regulation refers to a section of the manual which specifies that "...complete inventory reports are scheduled to be sent to the schools/offices quarterly."

   Schools and offices never receive a complete inventory listing unless they specifically request one. Instead, they only receive the inventory printouts when inventories are to be taken: usually one equipment category each month for schools and area offices and one complete listing annually for central offices.

3. Both the regulation and the manual refer to MCPS Form 310-80: Furniture and Equipment Inventory System Data Entry Form, as the exclusive form to be used by schools and offices in making changes to the inventory.

   Schools and offices no longer use this form. They normally make inventory changes directly on the inventory printouts which are returned to Property Management. At other times during the year,

they are supposed to use MCPS Form 234-17: Furniture/Equipment Inventory Property Report DELETE for deleting items from the inventory and MCPS Form 234-18: Furniture/Equipment Inventory Property Report: Addition/Correction for adding or correcting inventory items.

MCPS Form 310-80 is now used exclusively by account clerks in Accounting and Property Management and has been retitled Furniture and Equipment Inventory Property Report: Multiple Transactions.

4. The manual contains the old seven digit property code [1] which established the first two digits as AREA, the second two digits as CLASS, and the last three digits as ITEM.

   The new property code structure classifies the first two digits as CATEGORY and the last five digits as a DESCRIPTION code.

5. The reports illustrated in the manual are organized in order of AREA, CLASS within AREA, and ITEMS within CLASS.

   Current reports are structurally organized in alphabetical order.

Comments by Property Management Official

At the outset of this review, the audit staff asked Property Management for copies of all written documentation of procedures, manuals, flowcharts, and similar data. The auditors were advised that no documentation had been developed since the new system was established in 1980, except (1) training course material used to introduce the new system in 1981 and (2) letters of instruction sent out each month to schools and offices along with the listing of items to be inventoried. The auditors were also told that Property Management was waiting to get the "bugs" out of the system before dedicating any time to writing another manual.

At the completion of this review, this matter was discussed again. At that time, the director said that it would be logical to revise and update the regulations; but there were no plans to do so.[2]

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[1] Property code should not be confused with MCPS identification numbers which are assigned by the computer when a new purchase is entered in the records.

[2] In replying to the draft of this report, the associate superintendent for supportive services advised that MCPS Regulation EDC-RA was currently under revision.

SIGNIFICANT DELAYS IN COMPLETING AND RECORDING PHYSICAL INVENTORIES

The principal means for Property Management to maintain current perpetual inventory records is to insure that it receives inventory changes on time, as requested and that it enters such changes without unreasonable delay. These activities are not currently being performed in a timely fashion.

A large number of schools or other locations delay the completion of their physical inventories for long periods of time beyond the date that the corrected inventory printouts are to be submitted to the Property Management Office. These delays make it impossible for the furniture and equipment records to be maintained on a reasonably current basis, prevent the uniform updating of all furniture and equipment records within a given category, and increase the possibility for mistakes and errors to occur.

Overall Delays

Analyses of Property Management records for a six-month period from January to June 1984 disclosed that on the average only 78 of 144 schools, about 54 percent, returned their corrected physical inventory printouts to the Property Management Office on or before the time specified. The remaining schools were one or more times late in submitting the inventory printouts.

The 54 percent rate of return for all schools was about the same rate of return experienced by the 14 schools randomly selected for detailed review. These selected schools returned 57 percent of their corrected inventory printouts to Property Management on or before the due date specified. Conversely, 43 percent of the returns were late. A summary of the overall range of response times for these 14 schools is shown in Table 10.

TABLE 10

Overall Range of Response Times
(14 sample schools)

Range of response time	Number	Percent
On time	48	57
1 - 10 days late	8	10
11 - 20 days late	9	11
21 - 30 days late	4	5
31 - 45 days late	2	2
46 - 60 days late	3	3
61 - 90 days late	1	1
Over 90 days late	9	11
Totals	84	100

Delays by Categories

A different perspective on the extent and significance of the problem of delays can be seen by a summary of how late the inventory printouts are returned, by various equipment categories. Again, for the same six-month period in Fiscal Year 1984, five schools in each of six categories were responsible for a wide range of delays beyond the due date in returning their inventory printouts as summarized in Table 11.

TABLE 11

Longest Delays in Returning Inventories
(5 schools in each category)

Month	Category	Range of late returns, in days
Jan	Music	122 - 181
Feb	Cafeteria	38 - 152
Mar	Business Education	62 - 115
Apr	Science	86 - 99
May	Audiovisual	50 - 58
Jun	Computers	40 - 50

As the school year nears its end in June, there is less time available for completing the inventories; so the range of late returns for the more recent inventory categories would necessarily be shorter.

Consistently Late Returns

A number of schools were consistently late in returning their completed physical inventories on time. A few schools did not return their corrected inventory printouts for many months after the requested return date, and then they return several categories at the same time. Consistently late returns for six inventory categories, by type of school, are summarized in Table 12.

TABLE 12

Consistently Late Returns

Number of Categories Returned Late	Type of School			
	High	Junior	Elementary	Total
6	0	0	1	1 (a)
5	1	1	1	3
4	4	1	1	6
3	4	0	3	7
Totals	9	2	6	17

(a) This particular school returned its inventory print-outs for six equipment categories on July 30, 1984, more than a month after the end of the school year.

A majority of schools and offices return their inventory printouts on time, or reasonably so. However, the significant and continuous types of delays discussed in the foregoing paragraphs should not continue.

Comments by Property Management Official

At the beginning of this review, the director of the Division of Supply and Property Management explained that his staff follows up with the staff at the negligent schools and offices by personal telephone contact and that if this fails, he or his assistant then calls the school principal or office official. He said he prefers to handle this problem with personal diplomacy rather than by formal means because he believes this gets better results.

However, subsequent to the completion of the site work for this report, some formal follow-up action was taken by Property Management. On October 1, 1984, memoranda were sent to 73 schools requesting that they return their physical inventory printouts for various equipment categories that were due in Property Management between June 8 and August 31, 1984. They were also advised that it was the last request for the return of inventories before the area associate or auditors intervened.

Prior to this recent formal action, Property Management did not seem to be concerned about late inventory returns. In this regard, the Property Management Office also faces large backlogs of their own and are not really being held up by delayed inventory returns from schools and offices. For example, by mid-September 1984 the Property Management staff had not yet begun to review and record the results of the physical inventories returned to them, as shown in Table 13.

TABLE 13

Inventories Not Recorded
by mid-September

Category		Due in Property Management
11	Science	May 1, 1984
02	Audiovisual	June 8, 1984
05	Building Services	July 31, 1984
10	Office	August 31, 1984

In response to a draft of this report, recent data was presented evidencing more current and up-to-date recording of data by the Property Management staff. However the data showed little, if any, improvement in the timely reporting of physical inventory results by schools.

The Property Management staff was informed that some school personnel had complained to the audit teams that they did not know whether or not the requested changes were made to their perpetual inventory records until the following year when they received a new inventory printout to verify. The Property Management staff acknowledged that they don't send out updated inventory printouts to schools and offices until the next year's physical inventory is scheduled to be taken. They did not believe the information would be used and could see no reason it should be sent out any sooner.

Property Management's position fails to recognize that primary responsibilty and accountability for furniture and equipment rests with those officials who have physical control of it; and, therefore, they are entitled to accurate, current, and complete inventory listings from Property Management.

NO ACCOUNTABILITY FOR NUMEROUS INVENTORY CHANGES

Numerous deletions, transfers, and changes are being routinely made to furniture and equipment records without adequate management oversight or control. Consequently, responsible officials are not being held accountable for the use and disposition of furniture and equipment under their control and for the accurate maintenance of related inventory records for which they are responsible.

In Fiscal Year 1984, the Divisions of Property Management and Accounting recorded 65,800 additions, deletions, consolidations, and transfers in the perpetual inventory records as shown in Table 14.

TABLE 14

Perpetual Inventory Transactions

Additions	30,500
Deletions	17,900
Consolidations	11,200
Transfers	6,200
Total	65,800

Reviews of inventory printouts sent to Property Management by schools and offices disclosed that changes were normally submitted without supporting comments or documentation. Additions were not accompanied by purchase orders, when appropriate; deletions and transfers were not justified or explained; and items deleted in prior years were apparently found and added to the current inventory. One inventory printout was so replete with deletions that it was hard to believe so many had occurred since the previous year's inventory. Property Management staff said that this location was putting inventory on and taking inventory off all of the time.

The Property Management staff acknowledged that most inventory deletions and changes were not supported by the proper documentation. The staff said it did not always make the changes indicated on the inventory printouts without further investigation because of uncertainty as to the accuracy of the changes. Some examples follow:

-- One school requested that three of its word processors be deleted from the perpetual inventory records. Property Management staff explained that, in their opinion, the purchase of these three items was too recent to justify their deletions without further investigation, which was pending.

-- Several items were transferred or loaned from one location to another, but the inventory records were not changed accordingly. Property Management staff said that the changes were not made because the receiving locations had not acknowledged their acceptance of the transfers or loans. However, they also agreed that nothing should be transferred, moved, or loaned from one location to another without the proper documentation passing through Property Management.

It was also noted that the inventory printouts were not always signed by a responsible official, as defined in the administrative regulation. Some of the reports were signed by assistant principals, business managers, teachers, and secretaries none of whom had been specifically designated as a representative of the responsible official. In discussing this matter with the Property Management staff, they expressed the opinion that the "certification" signature on the inventory printouts was relatively meaningless, regardless of who signed the document.

If the system is working properly, Property Management should be able to accept the corrected inventory printouts and make the indicated changes, based upon accompanying documentation and the signature of an official or designee who is responsible for the changes. This would relieve Property Management of tedious and time-consuming reviews of records to make sure the indicated changes are correct, and it would also help them to reduce the backlog of changes to the perpetual inventory records.

On the other hand, when there are few explanations as to why items are to be changed and when Property Management has found too many errors or mistakes for it to rely upon a responsible official's signature on the inventory printout, the system is obviously not working as intended.

The best means for assuring that the system is working as intended is to adopt an efficient and economically feasible **Bar Code** system for identifying and recording physical assets. This subject is discussed in greater detail in Chapter 6.

CONCLUSIONS

More formal, structured and specific management action is necessary.

Existing procedures must be revised and updated so that management has the proper tools to direct and control the Furniture and Equipment Inventory System.

The excessive delays by numerous schools and locations in taking physical inventories of furniture and equipment and in returning the corrected inventory printouts on a timely basis are a serious impediment to the entire Furniture and Equipment Inventory System. These delays make it impossible for the Furniture and Equipment Inventory Records to be maintained on a reasonably current basis, unreasonably delay the uniform updating of all furniture and equipment records within a given category, and increase the possibility for mistakes and errors to occur.

School and office officials should be made aware of the importance to the school system of maintaining financial and physical control of furniture and equipment entrusted to them. It should be emphasized that they are responsible for taking and reporting accurate, current, and complete physical inventories and that this matter will be considered in their performance evaluations.

It is quite apparent that some officials fail to take their assigned responsibility to the Furniture and Equipment Inventory System seriously. A more timely and formal follow-up system needs to be developed and implemented so that this problem can be addressed and solved. Furthermore, recalcitant respondents should be identified to upper management in reports on the progress of each month's physical inventories.

Monthly reports on the results of the physical inventories should be made to the director of the Department of School Services. These reports should summarize the physical inventory activities for the month and highlight significant, excessive, and unusual delays, additions, changes, and corrections and should identify school and office locations and responsible

officials. An annual report on these matters should also be made to the superintendent, deputy superintendent, and associate superintendent for supportive services.

RECOMMENDATIONS

The associate superintendent for supportive services should:

-- Insure that proper documentation is submitted to Property Management in support of all significant changes resulting from school and office physical inventories.

-- Direct the development, revision, and updating of all furniture and equipment procedures and regulations and have the information included in a Property Control Manual which should also include the catalog of supplies, furniture, and equipment discussed in Chapter 2. It should be widely distributed throughout MCPS and required to be used by all concerned.

The director of the Department of School Services should:

-- Oversee the development and implementation by Property Management of a formal follow-up system and a monthly progress reporting system on the quality and timeliness of school and office inventories.

-- Submit an annual report to the superintendent and the Board of Education on (1) the status of the furniture and equipment inventories and (2) the progress, problems, and actions taken by Property Management to exercise management control over the furniture and equipment inventories including an assessment as to the extent of compliance with policies and procedures by schools and offices. Financial data in these reports should be verified by the Division of Accounting.

CHAPTER 6

EFFORTS MADE TO IMPROVE INVENTORY SYSTEM--MORE NEEDS TO BE DONE

The Division of Supply and Property Management is responsible for directing and controlling the inventory system and should continually be looking for new ways to change and improve it. Property Management has been successful in making some changes; unsuccessful in others. It needs to push forward aggressively to obtain needed changes, seeking upper management assistance and support, when necessary.

New approaches and techniques that have the potential for providing substantial, cost-effective improvements should be tried. Bar Code labeling of furniture and equipment is economically feasible and would solve many of the problems discussed in this report. It should be adopted.

CHANGES MADE

The present inventory system has evolved out of the needs of the Accounting Division, Property Office, and external auditors. Property Management has instituted a number of changes to meet these needs and to update and streamline the existing system. Some of the changes include (1) restructuring the property code and (2) developing the capability to extract special reports from HISTORICAL and CURRENT inventory files by such factors as "school," "inventory category," "property code," "income source," and similar factors.

Some special analyses were also made to improve the system. During the review, the audit staff were told of the following:

-- When existing property code numbers cannot be identified to a newly purchased item of equipment, Accounting puts five zeros (00000's) in the last five digits of the property code field. Periodically, Property Management requests and reviews a computer listing of all items with 00000's in the property code field. The purpose of this review is to enable Property Management to properly classify these new items of equipment and assign them an existing property code or a newly created property code. If the property code is new, it is added to TABLE 36, the Code and Descriptor Table used in the inventory system.

-- The other special analysis was Property Management's review of a listing of all computer equipment in the Perpetual Inventory. The purpose of this review was to try to (1) standardize descriptions throughout the system and (2) associate computers and related peripheral equipment with a special microcomputer system identification number.

UNSUCCESSFUL EFFORT TO CHANGE

An unsuccessful attempt by Property Management to improve the inventory system was its effort to speed up the accounting process for recording new citems of equipment initially received by Property Management for shipment to schools and offices. Items processed through Property Management are marked with a computer-generated MCPS identification number before the equipment is shipped to a school or office. In a number of instances, Property Management had the equipment but no identification number with which to tag and ship it to its destination.

Basically, the problem arose because MCPS identification numbers for equipment are not automatically generated by the computer until after Accounting adds the items to the perpetual inventory records. Accounting, on the other hand, was unable to record the items in a timely manner. To speed up obtaining of computer generated identification numbers, the Property Management staff made a proposal to Accounting that it be allowed to add to the Perpetual Inventory Records a limited amount of data pertaining to the items it received.

The Department of Financial Services rejected the proposal because it would violate generally accepted standards of internal accounting control. They countered with a proposal that a data entry suspense file be created to enable Property Management to enter items into the system to obtain an equipment identification number but not allow the master files to be updated until the item was processed through Accounting in the normal manner.

Financial Services intended that its proposal be incorporated as a requirement of the new financial accounting system which will not be installed for furniture and equipment until 1986 at the earliest. In this regard, the associate superintendent for supportive services, and the MCPS Computer Technology Management Review Board (CTMRB) had directed a policy of limiting changes to existing systems which were being replaced to only those changes required by law, regulation or BOE action. In light of this policy, Financial Services and Data Processing did not pursue this request further.

Property Management also did not pursue its request further although a clear mechanism for review and reassignment of resources exists through the CTMRB. In effect, Property Management did not use existing management channels to elevate their request.

OTHER CHANGES NEEDED

"Housekeeping" type changes always need to be made to the inventory system, but broader and more significant changes and improvements also need to be considered such as needed improvements associated with changes in the frequency, timing, and approach to taking physical inventories and the adoption of new and cost effective inventory techniques. Some examples are discussed in the following paragraphs:

1. One change to consider is whether all categories of equipment need to be physically inventoried every year. Furniture, for example, makes up a substantial part of the inventory; yet it is not tagged

and most items are grouped in lots. Does it need to be physically inventoried each year? A particular category of equipment may be relatively stable and susceptible to relatively few errors and losses. Does that category of equipment need to be physically inventoried each year? If not, a more efficient and cost-effective approach may be to take the inventory of furniture and certain categories of equipment once every two or three years.

Near the completion of this review, the internal audit staff was advised that the physical inventory of furniture had been deferred for one year. Regardless of the reason for deferral, Property Management has undoubtedly decided that furniture does not have to be inventoried every year. That is the type of change discussed herein and, if appropriate, should be expanded not only to furniture but also to other categories of equipment.

2. It may not be necessary to conduct physical inventories at all schools every year. Elementary schools, for example, have relatively lower valued inventories and may have few problems in controlling their physical inventories. If so, they should be considered for inventory less frequently than every year.

3. One potential improvement could be to vary the approach and the timing for taking physical inventories. Under the present system, schools and area offices are sent a different category of equipment each month for inventory verification, while central offices are sent a complete inventory to do at one time.

The Association of School Business Officials (ASBO) suggests that it is inefficient to take inventories by "class," as is done by schools and area offices. Rather, ASBO believes the most efficient inventory procedure is to move through an area and pick up all assets on a single pass, as is done in the central offices.

The "category" approach prolongs the inventory process at schools and area offices throughout the entire year and lends itself to duplications of equipment because (1) similar items are contained in different categories and (2) many of the same items are frequently moved from one location to another. This was particularly apparent to the internal audit staff who found similar items, such as office equipment and furniture, in several different inventory categories and at widespread locations throughout the schools and offices.

If an inventory of <u>all</u> <u>equipment</u> at a particular location were to be taken once a year, as is done in the Central Office, the risks of losses and duplications might be reduced. This approach would not place an undue burden on any one location or individual since, in most cases, the inventory would be distributed to various department heads and resource teachers the same way it is now done on a month-to-month basis. But, more importantly, the inventories for individual locations could be scheduled to promote fast turnaround at the Property Office and allow a complete and correct inventory listing to be returned to the school/office on a timely basis. This approach certainly would create a more positive attitude among school and office personnel, based upon a "Do-it-all-at-once-and-get-it-over-with" philosophy.

INNOVATIVE APPROACHES SHOULD BE UNDERTAKEN

One of the most difficult actions to control is the taking of an accurate and timely physical inventory. Many factors contribute to this problem such as items without serial numbers, duplicate serial numbers, inadequate descriptions in the records, and so on. It is even more difficult and time consuming for school and office personnel to locate inventory items that are not properly identified , as required.

MCPS Regulation EDC-RA states that "School/office equipment should be marked with an identification number...." This requirement is being followed only on equipment which passes through Property Management. During the course of the review, it was noted that this requirement was not being followed in most schools and offices. Property Management should not continue to ignore the regulation by allowing capitalized furniture and equipment to go unmarked without an identification number.

Bar Code Labeling Economically Feasible

As technology improves, more and more opportunities are created that enable management to obtain effective control over difficult situations. One possibility for minimizing the time and effort for taking physical inventories while improving its accuracy at less cost would be to use furniture and equipment identification labels known as Bar Codes.

Taking physical inventories with a Bar Code system would be a simple and less time consuming process for MCPS staff. They would need only to move from one room to another in a particular school or office with a hand held scanning device which would automatically "read" the bar code identification label on the furniture and equipment and automatically "record" the item in the scanner. No writing or physically recording of information by school and office staff or Property Management staff would be necessary. The information "recorded" in the scanner would later be directly transmitted to the Perpetual Inventory Records in the computer. The computer would produce "exception" reports for investigation and correction, in addition to updated and corrected total inventory reports for management control. Improved accuracy would be assured.

Recent literature cites many efficient and economical applications of Bar Codes for keeping track of property, especially in federal agencies. A U.S. Department of Energy office, for example, claimed that it had realized a 60- to 80-percent reduction in the time required to perform its physical inventories and a 50-percent reduction in the number of staff used.

The U.S. Department of Agriculture (USDA) prepared a detailed report on the results of a pilot study it conducted in the use of Bar Codes for taking physical inventories of furniture and equipment. USDA reported labor savings of 87 percent when using Bar Codes (20 hours) as compared to taking inventories manually (151 hours). Even considering the "one-time" costs for attaching labels during the first inventory, USDA reported a 42-percent labor savings. This study also projected a net savings of over $150,000 for a five-year period.

A preliminary analysis by the internal audit staff of the costs and cost avoidances with a Bar Code system suggests that MCPS would also achieve a net savings if it adopted such a system for its furniture and equipment inventories. After talking to several vendors and other organizations using various Bar Code systems, a "model" system was devised to estimate potential MCPS cost savings. No two systems are exactly alike, so real cost savings in a particular environment such as MCPS are difficult to estimate until a specific system is defined. For example, software could be developed in-house or purchased from an outside vendor; the system could be developed on the mainframe or on a microcomputer, or both; and labels could be purchased or prepared in-house on a label printer. Each of these choices affect the resulting costs. The approach adopted for the "model" assumes the use of a microcomputer in conjunction with the mainframe and the printing of labels in-house. A summary of this information is shown in Table 15.

TABLE 15

Bar Code System
Preliminary Cost Analysis

Explanation	Year 1	Year 2	Year 3	Year 4	Year 5
Start-up Costs					
Bar Code Readers (20 @ $1,500)	$30,000				
Programming Bar Code Readers	4,000				
Label Printer (optional)	10,000				
Labels @ $.04	6,000				
Software	10,000				
Microcomputer	5,000				
Printer	1,500				
	66,500 (a)				
Recurring Costs					
Staff labor (b)	46,100	$29,300	$29,300	$29,300	$29,300
Labels (10%)		600	600	600	600
Repairs		500	500	500	500
Miscellaneous computer costs		500	500	500	500
Total Cost	112,600	30,900	30,900	30,900	30,900
Cost Avoidance (b)	37,700	54,500	54,500	54,500	54,500
Net (Loss) Savings	$(74,900)	$23,600	$23,600	$23,600	$23,600

FIVE-YEAR CUMULATIVE COST SAVINGS IS $19,500

(a) Start-up costs could be handled as a lease/purchase arrangement with the costs being spread over a several year period, as some MCPS managers prefer.

(b) Staff labor is the largest element of cost recurring on an annual basis. This cost is based upon two estimates: (1) how much time MCPS staff spent on manually taking physical inventories in the past and (2) how much cost would be avoided by staff taking inventories with Bar Codes. The first estimate was derived from information obtained from the staffs at the 14 selected schools where the physical inventories were verified and tested. The second estimate is based upon the reductions in time experienced by the federal agencies, as previously discussed, and is conservatively estimated at 45 percent the first year because of the need to affix bar code labels and at 65 percent thereafter. This information is summarized in Table 16.

TABLE 16

Bar Code System
Estimated Recurring Staff Labor

Location and Estimate	Year 1	Later Years
High Schools (160 hours @ 22 schools)	$33,600	$33,600
Junior/Middle Schools (48 hours @ 22 schools)	10,560	10,560
Elementary Schools (32 hours @ 100 schools)	32,000	32,000
Other Offices, Centers, etc. (8 hours @ 96 locations)	7,680	7,680
Total Estimated Cost	83,840	83,840
Less: Estimated Cost Avoided (45%-65%)	37,728	54,596
Recurring Staff Labor Costs	$46,112	$29,334

Changes and new approaches are alway met with concern, trepidation and, sometimes, outright hostility by those most affected. This will also be true if Bar Codes are adopted. Two concerns expressed most frequently to the audit staff were (1) the amount of time it will take to affix bar code labels on the equipment and (2) the possible destruction of bar code labels after they are attached to the equipment.

It is undoubtedly a difficult task initially to attach bar code labels to all the equipment and to adjust the Perpetual Inventory Records accordingly. A great deal of planning, coordination, and hard work will be involved but will not necessarily be prohibitive. As a matter of fact, the USDA attached labels while taking its inventory and still achieved a 42-percent labor savings. There is no reason to believe that MCPS could not do as well. To affix bar code labels, MCPS could use school and office staffs, special teams, and outside contractors, or a combination of all three, depending upon which approach is the most economical. Furthermore, bar code labels need not be affixed to furniture. Furniture can be inventoried by class and counted by a unique bar code labeling technique.

Some destruction of labels will undoubtedly occur and is a genuine concern of all who use bar code labels. The problem, however, is not insurmountable. Labels are produced from many different types of products--paper, polyester, foil, mylar, vinyl, and metal. A vinyl label with a pressure-sensitive adhesive is, for example, extremely difficult to remove after about four hours and cannot be removed intact. Other labels have protective plastic coating, and there are also more expensive metal labels which can be permanently attached to equipment in extremely vulunerable situations. Good overall supervision and control by responsible MCPS staff

should keep this problem to a minimum. Even with some destruction of bar code labels, inventory accuracy would be far better than it is today.

CONCLUSIONS

Property Management has made some efforts to refine and improve the Inventory Control System within its existing framework, but it has not tried any different approaches nor looked into new techniques that could be less burdensome to the staff or could provide substantial, cost effective improvements. Property Management should continually explore new methods and approaches to inventory control and adopt those which are cost-effective for MCPS. Bar Code labeling is cost effective and would aid in solving many of the problems discussed in this report. It would:

-- Minimize staff time and effort in taking physical inventories.

-- Improve the accuracy and completeness of physical inventories and related records.

-- Minimize delays in completing and recording physical inventories.

-- Increase accountability for equipment under one's responsibility.

-- Allow increased flexibility for changing and improving the inventory system through new approaches and techniques.

-- Provide better opportunities for analyses of records and evaluation of staff performance.

RECOMMENDATIONS

The associate superintendent for supportive services should:

-- Instruct the Property Management staff to undertake a continuous study and evaluation program for upgrading and improving the inventory control system on a cost-effective basis.

-- Direct Property Management staff to adopt a system of Bar Codes as a means of identifying and controlling the MCPS furniture and equipment inventories.

-- Assure that the Inventory Control System receives adequate data-processing support by directing Property Management staff to pursue its legitimate needs through proper management channels.

APPENDIX I

SCOPE AND METHODOLOGY

The internal audit staff reviewed pertinent information and criteria promulgated by various authorities, including the American Institute of Certified Public Accountants, the Municipal Finance Officers Association, and the Association of School Business Officials. It reviewed historical background information pertaining to the current MCPS furniture and equipment system and pertinent MCPS policies, regulations, procedures, records, and data applicable to the entire program.

The internal audit staff reviewed furniture and equipment records maintained by Accounting and Property Management and made extensive physical inventory verifications at most central and area offices and 14 selected schools.

To reasonably assess a $59 million furniture and equipment inventory containing about 500,000 individual items and almost 100,000 line items, it was essential that a sample of inventory items be developed for a physical inventory verification. Furniture was excluded from all samples because individual items cannot be specifically identified by a serial number or an individual property tag. The selection of inventory samples for schools and for offices was approached in a slightly different manner, as explained in the following paragraphs:

It was believed that a 20-school sample would provide a reasonable cross-section of activity. Additional exclusions from the schools samples were small dollar value categories of equipment, such as vehicles, health, and driver education equipment. A table of random numbers was used to select schools' numbers until a final sample of five high schools, five junior/middle schools, and ten elementary schools was obtained (Appendix II). After the equipment categories were selected and the schools identified, a computer program determined that the size of the sample population was 12,900 line items, having a total value of $4.9 million. A random selection of 5 percent of the equipment items was made from the sample population by the computer. The computer-selected audit sample, for schools actually visited, consisted of 534 line items with a total value of $196,000. (Because of schools closing for the summer, staff actually visited only 14 schools--four high schools, five junior/middle schools, and five elementary schools. The consistency of results at these locations provided ample assurance that no major deficiencies were overlooked as a result of the reduced scope of work.)

Inventory records for central and area offices are identified by "location" code. Because of the close proximity of offices at each major location, all central and area offices were included in the sample population, as were all categories of equipment, except furniture. Again, the computer was used to obtain a random selection of 5 percent of the equipment. The computer-selected audit sample for

offices visited consisted of 380 line items with a total value of $917,000. This did not include the Maintenance Department which had requested and was undergoing a special physical inventory by Property Management.

While visiting the school and office locations, the audit teams randomly selected serial numbers and other identifying data from 993 additional items of equipment and compared that information to the Perpetual Inventory Records.

The internal audit staff also interviewed MCPS officials and staff throughout the organization during the review to obtain their views and comments as to the adequacy of the current Furniture and Equipment Inventory System.

APPENDIX II

LIST OF 20 SCHOOLS SELECTED
FOR PHYSICAL INVENTORY

AREA ONE

High Schools

757 Montgomery Blair

Junior and Middle Schools

333 Benjamin Banneker
507 William H. Farquhar
755 Takoma Park

Elementary Schools

310 Cannon Road
776 Montgomery Knolls
803 Forest Knolls

AREA TWO

High Schools

201 Richard Montgomery
424 Walter Johnson

Junior and Middle Schools

232 Tilden
820 Earle B. Wood

Elementary Schools

204 Garrett Park
210 Maryvale
607 Bells Mill
783 Kensington-Parkwood

AREA THREE

High Schools

510 Col. Zadok Magruder
701 Damascus

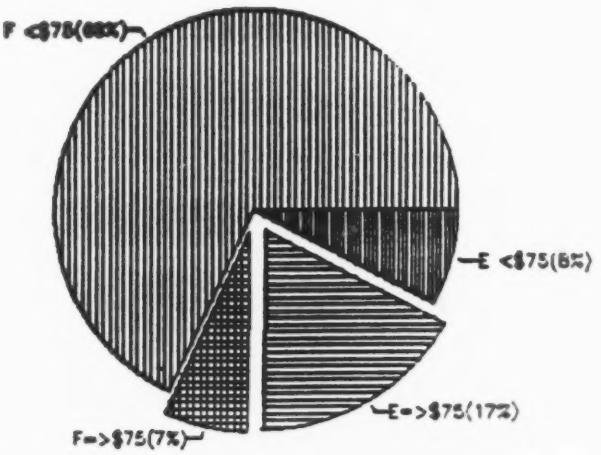
Elementary Schools

216 Travilah
227 Ritchie Park
702 Damascus

APPENDIX III

COMPARISON OF FURNITURE & EQUIPMENT

QUANTITY



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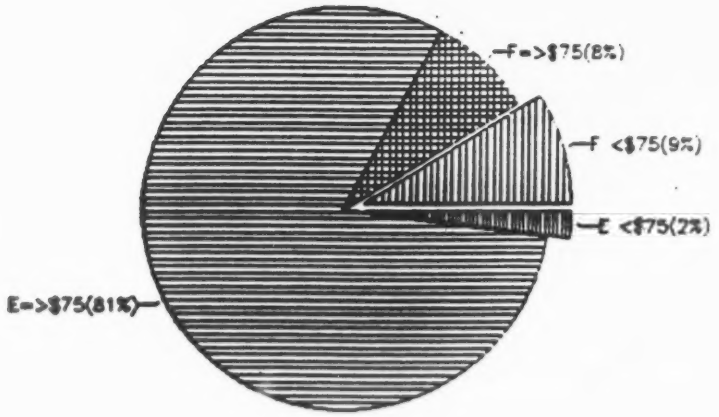

APPENDIX IV

MCPS
SELECTED ITEMS OF FURNITURE AND EQUIPMENT
(Under $75)

6/30/84

MCPS Id Num	Item Description	Quantity	Value	Average Cost
3365	Chair student	141,220	$1,113,336	$7.88
20016	Table classroom	24,579	926,169	37.68
4220	Desk student	54,762	605,316	11.05
3012	Cabinet file 4	10,944	603,578	55.15
4214	Desk/chair/desk	33,665	469,722	13.95
3355	Chair conference	6,764	229,419	33.92
20024	Table projection	5,919	209,037	35.32
3369	Chair other	8,073	198,114	24.54
3360	Chair folding	34,819	195,218	5.61
18225	Record player	3,125	170,617	54.60
18229	Recorder cass	2,083	111,579	53.57
3010	Cabinet file 2	2,029	97,045	47.83
20033	Table-other	2,216	95,135	42.93
4222	Desk teacher	1,523	89,832	58.98
3363	Chair secretarial	2,315	85,894	37.10
3367	Chair teacher	3,632	81,895	22.55
12395	Listening station	1,240	77,183	62.24
19364	Shelf storeroom	2,722	76,599	28.14
20010	Table bus ed	1,772	74,508	42.05
19840	Stool	3,395	71,369	21.02
3358	Chair executive	1,388	64,048	46.14
2620	Bookcase	1,345	61,678	45.86
16705	Previewer FS	1,534	58,803	38.33
3015	Cabinet-other	1,279	55,955	43.75
3035	Carrell study	874	44,561	50.99
13382	Microscope	942	36,280	38.51
16731	Projector FS	512	33,364	65.16
13125	Computer	368	24,040	65.33
20012	Table cafeteria	458	20,743	45.29
2027	Balance 3 high	326	13,926	42.72
7865	Guitar acoustic	280	12,813	45.76
19792	Stand music	700	10,224	14.61
3385	Chromaharp	226	10,104	44.71
2026	Balance 4 high	204	9,744	47.76
13380	Microphone	202	8,313	41.15
2024	Balance 2 high	109	4,781	43.86
4705	Drill electric	95	4,653	48.98
3025	Calculator	177	4,009	22.65
13910	Multimeter	103	3,540	34.37
18015	Radio	78	2,516	32.26
16706	Previewer slide	95	2,134	22.46
2025	Balance 2 low	40	1,458	36.45
18017	Radio FM	17	514	30.24
Total Sample - under $75		358,149	$6,069,766	$16.95
Totals - All Inventories		496,732	$59,418,535	$119.62

APPENDIX V

MARYLAND FINANCIAL REPORTING MANUAL
(Excerpts of Supplies and Equipment from Appendix B)

Adding Machine Ribbons-S
Adding Machine Tapes-S
Addressing Machine
Addressing Machine Plates-S
Addressing Machine Ribbons-S
Addressing Machine Stencils-S
Addressing Machines-E
Adhesive Tape-S
Adzes-S
Air, Compressed-S
Air Compressors-E
Air Conditioning Units, Casement-E
Air Gauges, Tire-S
Air Hoists-E
Albums-S
Alcohol-S
Alidades, Telescopic-E
Alignment Gauges, Camber, Toe-in etc.-E
Ammonia-S
Ampules-S
Anatomical Charts-S
Anatomical Models-E
Andirons-E
Anemometers-E
Anesthetics-S
Aniline Dyes-S
Animal Boxes-S
Anti-freeze-S
Antiseptic Gauze-S
Antiseptics-S
Antitoxins-S
Anvils-E
Apparatus Cabinets-E
Applicators, Throat-S
Aprons-S
Aquariums-E
Arc Welding Apparatus-E
Arch Supports-S
Archery Sets-S
Architect's Scales, 1 in. meas.-S
Armature Growlers-E
Arrows-S
Art Canvases-S
Art Crayons-S
Art Erasers-S
Art Paints-S
Art Paper-S
Asbestos-S
Ash Cans-S
Asphalt-S
Asphalt Roofing and Siding-S
Astringents-S
Astrographs, Wall-E
Athletic Uniforms-S
Atlases-S
Atomizers-S
Audiometers-E
Auger Bits-S
Augers-S
Autoclaves-E
Automatic Regulating Valvers-S
Automobile Accessories-S
Automobile Controls for Handicapped Persons-S
Automobile Defrosters-S
Automobile Fuel Tanks-S
Automobile Heaters-S
Automobile Lifts-E
Automobile Signals-S
Automobile Tires and Tubes-S
Automobiles-E
Awls-S
Axes-S

B

Babbit Metal-S
Badges-S
Badminton Rackets-S
Bags, Laundry-S
Baking Pans-S
Baking Powder-S
Baking Soda-S
Balances, Beam-E
Balances, Small Spring-S
Baling Presses, Compression Moulding-E
Ball Bearings-S
Ball Peen Hammers-S
Balloons-S
Ballot Boxes-S
Balls-S
Band Instruments-E
Band Saw Blades-S
Band Saws-E
Bandages-S
Bands, Rubber-S
Banners-S
Barber Shop Tools, Electrical-E
Barber Shop Tools, Hand-S
Barber Type Furniture-E
Barographs-E
Barometers-E
Barrels-S